

rate of one bit per clock cycle on the clock input node 24 (step 56 in Figure 3). When the sensor has emptied the register 15, the sensor 14 affixes a third data value to the response and asserts the third data value on the output node 16 at the rate of one bit per clock cycle on the clock input node 24 (step 58 in Figure 3). The third data value provides an indication that the sensor 14 is functioning correctly. As the output signal 32 illustrates, the affixed value corresponds to a 010 bit pattern. Nevertheless, those skilled in the art will recognize that the sensor 14 can affix an alternative bit pattern, such as 101 and the affixed value asserted by the sensor 14 can precede or follow the assertion of the measured value shifted out of the register 15. Moreover, those skilled in the art will recognize that the bit length of the measured response can vary depending on the application, the accuracy required and the like.

In the Claims:

Please amend Claims 1, 2, 3, and 8 as follows.

Please cancel Claims 4 and 5 without prejudice.

1. (Amended) A thermal sensor in an integrated circuit comprising:  
a register to hold a response of said thermal sensor; and  
an Input/Output (I/O) interface having an input node to receive an input trigger to trigger said thermal sensor to output on an output node of said interface an output signal that includes said response held by said register, an indicator that indicates said thermal sensor is sensing the temperature of said integrated circuit, and a value generated by said thermal sensor that indicates said thermal sensor is functioning properly.

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112 we  
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2. (Amended) The thermal sensor of claim 1, wherein said Input/Output interface comprises a digital Input/Output interface having at least one input node capable of receiving a digital input and at least one output node capable of asserting a digital output.

*Cancelled At*

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3. (Amended) The thermal sensor of claim 2, wherein said input node and output node comprises at least two electrical contacts capable of providing an off chip interface.

*A5*

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8. (Amended) The thermal sensor of claim 1, wherein said thermal sensor appends said value that indicates said thermal sensor is functioning properly to said response of said thermal sensor.

In the Figures

Figure 2 is amended to add "signal" to each illustrated waveform as shown in red by the enclosed amendment to Figure 2.